Code: 12070/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV – Semester (PCI) (Backlog) Examination, March 2021**

**Subject: Physical Pharmaceutics - II**

**Time : 2 Hours** **Max. Marks: 75**

**Note: Answer any seven questions Part – A, any one questions from Part – B and any five question from Part – C.**

## PART – A (7x3=21 Marks)

1. What is HLB? What are its applications?
2. What is Tyndall effect?
3. Define surface tension. Mention its applications.
4. Define viscosity. Mention its applications.
5. Write stokes equation for sedimentation of particles.
6. What is Hooke's law? Give idea about plastic and elastic deformation.
7. Write the applications of microemulsions.
8. What is bulk density? Mention its applications.
9. What is first order reaction? Give some examples of first order reaction.
10. What is photo degradation? How it can be prevented?

## PART – B (1 x 14 = 14)

11. Explain about methods for determination of viscosity.
12. Explain about formulation of flocculated and deflocculated suspensions.
13. Discuss about methods for determining order of reaction.

## PART - C (5 x 8 = 40)

14. Explain about association of colloids.
15. Explain about plastic flow of liquids and give idea about plastic viscosity.
16. Write about theories of emulsification.
17. Mention the measures to prevent hydrolysis.
18. Write the principle as well as method for determination of surface tension.
19. State Fick's first law of diffusion and its role in colloids.
20. Write about hydrolytic degradation and its prevention.
21. Write the limitations of accelerated stability testing.
22. Explain about preservation of emulsion.

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Code No. 12069/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV-Semester (PCI) (Backlog) Examination, March 2021**

**Subject: Medicinal Chemistry - I**

**Time : 2 Hours** **Max. Marks: 75**

**Note: Answer any seven questions Part – A, any one questions from Part – B and any five question from Part – C.**

## PART – A (7x3=21 Marks)

1. Write the uses of cholinesterase inhibitors with two drug examples.
2. Write the structure and uses of Phenytoin.
3. Define geometrical isomerism with examples.
4. Write the structure and uses of any two anti inflammatory drugs.
5. Mention the uses of Adrenergic receptors blockers with two drug examples.
6. Explain the effect of solubility in relation to biological action of drug.
7. Write any two uses of Cholinersicegic blocking agents with examples.
8. Write the advantages of selective Cox-2 inhibitors.
9. Define and classify anticonvulsant drugs with suitable example.
10. Define sedative and heypnotic with examples.

## PART – B (1 x 14 = 14)

11. What is drug metabolism? Write the factors influencing drug metabolism including sterochemical aspects.
12. Write the mechanism of action, uses and SAR of morphine analogues. Outline the synthesis of (a) Meperidine Hcl(pethidine) (b) Fentanyl citrate.
13. Write the classification, mechanism of action, SAR and uses of parasympathomimtic agents, atleast 2 structures for each class.

## PART - C (5 x 8 = 40)

14. Write the importance of Bio-isoterism in drug design.
15. Write a note on ganglionic blocking agents.
16. Write the SAR of β-adrenergic blockers. Outline the synthesis mechanism of action and uses of propranolol.
17. Write a note on narcotic antagonists. Write the structures and uses of (a) Naloxone Hcl, (b) Nalorphine Hcl.
18. Define anti inflammatory agents. Write the classification, mechanism of action and uses of NSAIDS, atleast 2 structures for each class.
19. Outline the synthesis, mechanism of action and uses of (a) Halothane (b) Ketamine Hcl.
20. Explain indetail about SAR of Barbiturates.
21. Define and classify cholinergic blocking agents. Explain the SAR of tropane alkaloids.
22. Write the synthesis of Ibuprofen.

Code: 12068/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV - Semester (PCI) (Backlog) Examination, March 2021**

**Subject: Pharmaceutical Organic Chemistry - III**

**Time: 2 Hours** **Max. Marks: 75**

**Note: Answer any seven questions from Part – A, and one question from Part – B, and any five questions from Part – C.**

## PART – A (7x3=21 Marks)

1. Describe the terms plane polarized light and meso compound.
2. Write any one method of synthesis of Oxazole.
3. Mention any two reactions of Pyrazole.
4. Define geometrical isomerism with examples.
5. Give two applications of Lithium Aluminium Hydride.
6. Write the structures and medicinal use sof Isoxazole and thiazole.
7. Write any two reactions of acridine.
8. Discuss the conformations of ethane.
9. Write the names of any two compounds containing inidazole and oxazole.
10. Define elements of symmetry.

## PART – B (1x14=14 Marks)

11. (a) Explain sequence rules to determine R and S configuration.
    (b) Write the conformational isomerism in Butane.
12. Outline any two methods of preparation and three reactions of Pyrrole and Furan.
13. Describe the mechanism of following reactions
    (i) Beckmann rearrangement (ii) Oppenauer oxidation.

## PART - C (5x8=40 Marks)

14. Discuss two applications of Claisen schimdt condensation.
15. Discuss any two methods of resolution of racemic modification.
16. Outline the method of preparation of Quinoline and Isoquinoline.
17. Write any three reactions and uses of thiophene.
18. Write a note on basicity of Pyridine.
19. Give the structures and specific uses of drugs containng (i) pyrimidine (ii) purine.
20. Explain stereospecific and stereoselective reactions with examples.
21. Explain Fischer Indole synthesis.
22. Give a brief account on Asymmetric synthesis.

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Code No: 12072/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV- Semester (PCI) (Backlog) Examination, March 2021**

**Subject: Pharmacognosy & Phytochemistry - I**

**Time: 2 Hours** **Max. Marks: 75**

**Note: Answer any seven questions from Part – A, and one question from Part – B, and any five questions from Part – C.**

## PART – A (7 X 3 = 21)

1. Differentiate organized and unorganized drugs.
2. What is organoleptic evcaution? Give examples.
3. What are uses of plant hormones? Give examples.
4. How do you test the germinating ability of seeds?
5. Write the uses of Flavonoids.
6. Write tests to differentiate cotton, jute.
7. Explain enfleurage.
8. Write source and uses of bromolein.
9. Write industrial applications of castor oil.
10. Write principles of ayurvedic system of medicine.

## PART – B (1 x 14 = 14)

11. Discuss the development of pharmacognosy giving the historical background. What is the scope of pharmacognosy in providing new drugs?
12. Discuss the advantages and disadvantages of obtaining the crude drugs from cultivated and wild plants.
13. Write in detail applications of plant tissue culture.

## PART - C (5 x 8 = 40)

14. Explain the principles of Homeopathy.
15. Write a note on Lycopodium Spore method.
16. Elaborate the applications of plant growth hormones in the cultivation of medicinal plants.
17. Write biological source, active constituents and uses of (i) Honey (ii) Chaulmoogra Oil.
18. Write about Edible vaccines.
19. How do waxes differ from fats? Write a pharmacognostic note on Bees wax.
20. Write the definition, properties and identification tests for Tannins.
21. Discuss different types of cultures in Plant Tissue Culture.
22. Write a note on marine biologicals as a source for novel drugs.

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Code: 12071/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV - Sem. (PCI) (Backlog) Examination, March 2021**

**Subject: Pharmacology - I**

**Time : 2 Hours** **Max. Marks: 75**

**Note: Answer any seven questions Part – A, any one questions from Part – B and any five question from Part – C.**

**PART – A (7x3=21 Marks)**

1. Define bioavailability and volume of distribution.
2. What is biological half life and its importance.
3. Define tolerance and tachyphylaxis.
4. Classify neurotransmitters with examples.
5. Define (i) Sedative (ii) Hypnotic.
6. Write the examples of beta blockers with intrinsic sympathomimetic activity.
7. Write any two differences between $GABA_A$ and $GABA_B$ receptors with examples.
8. Differentiate typical and a typical antipsychotics.
9. Define therapeutic index. Write the examples of narrow therapeutic index drugs.
10. Write any two examples of CYP enzyme inducers and inhibitors.

**PART – B (1 x 14 = 14)**

11. Define Receptor. Classify receptors and explain about G-Protein coupled receptors with signaling transduction mechanisms.
12. Write the pharmocolgy of
    (a) Diazepam (b) Morphine (c) Propranolol
13. Classify sympathomimetic drugs with examples. Explain the pharmacology of adrenaline.

**PART - C (5 x 8 = 40)**

14. Write a note on phase-I biotransformation reactions with examples.
15. Discuss about pharmacokinetic drug interactions with suitable examples.
16. Explain about the mechanism of action, adverse effects and uses of
    (a) Local anaesthetics.
    (b) Curare alkaloids.
17. Explain the mechanism of action, adverse effect and uses of
    (a) Beta blockers.
    (b) Anticholinesterases.
18. Classify antidepressants with examples. Write the mechanism action and adverse effects of tricyclic antidepressants.
19. Write about mechanism and stages of general anesthesia.
20. Explain about cholinergic transmission.
21. Classify sedative-Hypnotics with examples. Explain mechanism of action, adverse effects and uses of barbiturates.
22. Write a note on various phases of clinical tds

Code: 6283/PCI

# FACULTY OF PHARMACY

## B. Pharmacy IV - Semester (PCI) (Main & Backlog)

## Examination, November 2020

## Subject: Medicinal Chemistry - I

**Time: 2 Hours** **Max. Marks: 75**

***PART – A***

***Note: Answer any Seven questions.*** ***(7 x3=21 Marks)***

1. Define and classify adrenergic blocking agents.
2. Explain the effect of protein binding in relation to biological action of drug.
3. Explain the pharmacological actions of cholinergic receptors (Muscarinic & nicotic).
4. What is bio-isoterism? Give two examples.
5. Write the structures and uses of following drugs.
   (a) Epinephrine (b) Ephedrine.
6. Write the structures and uses of any two ultrashort acting barbiturates.
7. Write the structure IUPAC name, and uses of phenyl butazone.
8. What are the uses of skeletal muscle relaxants? Give two examples of drugs.
9. Write the mechanism of action and uses of dissociative anaesthetics.
10. Mention the actions of adrenergic receptor antagonists.

***PART – B***

***Note: Answer One question.*** ***(1 x14=14 Marks)***

11. Define and classify NSAIDS with suitable examples. Outline the synthesis, mechanisms of action and uses of (a) Ibuprofen (b) Diclofenac.
12. (a) Classify antipsychotics with suitable example. Discuss the SAR of phenothiazines.
    (b) Write a note on narcotic antgonists? Outline the synthesis mechanism of action and uses of Naloxone Hcl.
13. Discuss the effect of the following physico chemical parameters that influence the biological activity.
    (a) Partition coefficient (b) Hydrogenbonding (c) Ionization and Pka.

***PART - C***

***Note: Answer any Five questions.*** ***(5x8=40 Marks)***

14. Define and classify sedative and hypnotics with atleast 2 structure for each class. Write the metabolic pathway of Diazepam.

**…2**

15. Write a note on narcotic analgesics.
16. Define and classify anticonvulsants. Write atleast 2 structures for each class.
17. Explain the sterochemical aspects of drug metabolism.
18. Explain glucuronic conjugation in drug metabolism,
19. Explain pharmacological actions and SAR of sympathomimetic agent.
20. Outline the synthesis, mechanism of action and uses of following drugs (a) Phenytoin (b) Carbamazapine.
21. Define and classify SAR of parasympathomimetic agents. Outline the synthesis of carbachol.
22. Write the IUPAC name, structure, mechanism of action and use of following drugs (a) phenylephrine (b) acetylcholine (c) piroxicam.

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Code: 6284/PCI

# FACULTY OF PHARMACY

## B. Pharmacy IV-Semester (PCI) (Suppl.) Examination, December 2020

## Subject: Physical Pharmaceutics - II

**Time: 2 Hours** **Max. Marks: 75**

***PART – A***

***Note: Answer any Seven questions.*** ***(7 x3=21 Marks)***

1. What is bulk density? Mention its applications.
2. Differentiate between lyophilic colloid and lyophobic colloid.
3. Define (a) Specific viscosity (ii) Kinematic viscosity.
4. Write the effect of temperature on viscosity.
5. Differentiate between flocculated suspension and deflocculated suspension.
6. Define (a) Sedimentation volume (b) Degree of flocculation.
7. What is angle of repose? Suggest methods to improve flow properties of granules.
8. Define porosity. Write its applications in pharmacy.
9. Give the equations for half life and shell life for first order reaction.
10. What is zero order reaction? Give some examples of zero order reaction.

***PART – B***

***Note: Answer One question.*** ***(1 x14=14 Marks)***

11. Explain about Newtonian systems and non-Newtonian systems of flow of liquids.
12. Explain about optical, kinetic and electrical properties of colloids.
13. Discuss about methods for determining particle size.

***PART - C***

***Note: Answer any Five questions.*** ***(5x8=40 Marks)***

14. Explain protective action of colloids and give idea about gold number.
15. Classify dispersed systems by their general characteristics.
16. Discuss any one method for determination of Viscosity.
17. Explain about measurement of thixotropy.
18. Discuss about the factors which improve physical stability of emulsion.
19. Write the importance of Stokes and law of sedimentation in suspension.
20. Mention the measures to prevent oxidative decomposition.
21. Explain about the methods for determination of true density.
22. Write about creaming in emulsion.

Code: 6282/PCI

# FACULTY OF PHARMACY

## B. Pharmacy IV-Semester (PCI) (Main & Backlog)

## Examination, November 2020

## Subject: Pharmaceutical Organic Chemistry - III

**Time: 2 Hours** **Max. Marks: 75**

### PART – A

**Note: Answer any Seven questions.** **(7x3=21Marks)**

1. Define elements of symmetry.
2. Write any one method of synthesis of pyrazole.
3. Describe the terms optical activity and enantiomerissm.
4. Mention any two reactions of thiophene.
5. Define cis trans isomerism with examples.
6. Give two applications of Lithium Aluminium Hydride.
7. Write the structures and medicinal uses of Isoxazole and thiazole.
8. Write any two reactions of imidazole.
9. Draw the conformations of cyclohexane.
10. Write the names and uses of any two compounds containing hetero cycles.

### PART – B

**Note: Answer One questions.** **(1x14=14Marks)**

11. (a) Explain sequence rules to determine R and S configuration.
    (b) Write the conformational isomerism in cyclohexane.
12. Outline any two methods of preparation and three reactions of Pyrrole and Furan.
13. Describe the mechanism of following reactions.
    (i) Beckmann rearrangement (ii) Clemmensen reduction.

### PART - C

**Note: Answer any Five questions.** **(5x8=40Marks)**

14. Mention two applications of NaBH4 and Birch reduction.
15. Discuss any two methods of resolution of racemic modification.
16. Outline the method of preparation of Quinoline and Isoquinoline.
17. Write any three reactions and uses of Oxazole.
18. Write a note on basicity of Pyridine.
19. Give the structures and specific uses of drugs (one for each category) containing (i) pyrimidine (ii) purine (iii) azepine (iv) oxazole (v) thiazole.
20. Explain stereospecific and steroselective reactionso with examples.
21. Explain Fischer Indole synthesis.
22. Give a brief account on Asymmetric synthesis.

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Code: 6286/PCI

# FACULTY OF PHARMACY

## B. Pharmacy IV - Semester (PCI) (Main & Backlog)

## Examination, December 2020

## Subject: Pharmacognosy and Phytochemistry - I

**Time: 2 Hours** **Max. Marks: 75**

***PART – A***

***Note: Answer any Seven questions.*** ***(7 x3=21 Marks)***

1. Define adulteration. Give two examples of drug adulteration.
2. Write source and use of any two mineral drugs.
3. Write significance of water soluble ash taking any one example.
4. What are applications of plant hormones? Give examples.
5. Explain any two chemical tests for alkaloids.
6. Define 'Yin' and 'Yang' concepts of Chinese medicine.
7. Write the source and uses of tragacanth.
8. Write sources of Papain and Serratiopeptidase.
9. Write about any one plant terratogen.
10. Write advantages of hybridization of plants.

***PART – B***

***Note: Answer One question.*** ***(1 x14=14 Marks)***

11. What is the importance of alternative systems of medicine in India? Giving principles of ayurveda explain the role of phqarmacognosy in providing effective drugs.
12. Define 'Drug Evaluation'. Write a note on (i) Determination of Moisture (ii) Morphological evaluation.
13. Write pharmacognostic note on Agar & Gelatin.

***PART - C***

***Note: Answer any Five questions.*** ***(5x8=40 Marks)***

14. What is Biological evaluation? Write its application in evaluation of drugs.
15. Differentiate gums and mucilages. Write the source, active constituents and uses of one drug for each class.
16. Write about chemical classification of crude drugs. …2

17. Explain influence of living and non- living factors in storage of crude drugs.
18. Discuss applications of plant breeding techniques with examples.
19. Discuss nutritional requirements for cultivation of plant cells.
20. Define and classify alkaloids with examples. Also write their identification tests.
21. Write the source, method of preparation and uses of Tragacanth and Wool fat.
22. Write a note on Plant hallucinogens.

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Code: 6285/PCI

# FACULTY OF PHARMACY

## B. Pharmacy IV - Semester (PCI) (Main & Backlog) Examination, December 2020

## Subject: Pharmacology - I

**Time: 2 Hours** **Max. Marks: 75**

***PART – A***

***Note: Answer any Seven questions.*** ***(7 x3=21 Marks)***

1. Write any two differences between competitive and non competitive antagonists?
2. Define biological half life and clearance.
3. Define prodrug. Write the examples of prodrugs.
4. Differentiate between enzyme induction and enzyme inhibition.
5. Write the metabolic enzymes for catecholamines.
6. Define drug tolerance and dependence.
7. Explain the mechanism of action of acetazolamide for treatment of glaucoma.
8. Define allosteric modulator. Write the examples of drugs act as allosteric modulations.
9. Define (i) Agonist (ii) Antagrist.
10. Write the examples of inhibitory neurotransmitters.

***PART – B***

***Note: Answer One question.*** ***(1 x14=14 Marks)***

11. Classify antiepileptic drugs. Explain mechanism action, adverse effect and uses of any 3 classes of drugs.
12. Classify parasympathomimetics with examples. Write the pharmacology of acetylcholine?
13. (a) Write about regulation of receptors with suitable examples.
    (b) Explain about transmembrane JAK-STAT receptors with examples.

***PART - C***

***Note: Answer any Five questions.*** ***(5x8=40 Marks)***

14. Define elimination of drugs. Explain about kinetics of drug elimination.
15. Write a note on alcohol and disulfiram.
16. Classify neuromuscular blockers with examples. Write the mechanism of action, adverse effects and uses of curare alkaloids.
17. Classify opoid analgesics with examples. Write about the pharmacological actions of morphine.
18. Explain about adrenergic transmission.
19. Discuss enzyme induction and inhibition with suitable examples.
20. Classify antiparkinson's drugs with examples. Write the mechanism of action and adverse effects of dopamine precursor.
21. Define and classify ADR. Write a note on drug allergy.
22. Classify general an aesthetics with examples. Explain about the mechanism of general an aesthesia.

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Code No. 6056/PCI

# FACULTY OF PHARMACY

## B. Pharmacy IV-Semester (PCI) (Suppl.) Examination, January 2020

### Subject: Medicinal Chemistry - I

**Time: 3 Hours** **Max. Marks: 75**

Note: Answer All questions from PART-A, any TWO questions from PART-B and any SEVEN questions from PART-C.

### PART-A (10 x 2=20 Marks)

1 Define ionization. Give the equation to calculate % drug ionized.
2 *o*-Salicylicacid is more active than *p*-hydroxybenzoicacid. Why?
3 Write a note on adrenergic receptors and their distribution.
4 Write the structure and uses of naphazoline and tolazoline.
5 Write the synthesis of carbachol.
6 Write the structure and MOA of pralidoxime chloride.
7 Define sedatives and hypnotics with examples.
8 Give the structure and uses of haloperidol.
9 Define narcotic antagonists with examples.
10 Give the synthesis of ibuprofen.

### PART-B (2 x 10 = 20 Marks)

11 (a) Explain in detail about conjugation reactions. (6M)
(b) Explain the factors affecting drug metabolism. (4M)

12 (a) Write a note on SAR of morphine analogues. (5M)
(b) Classify cholinolytic agents with examples. (5M)

13 (a) Write SAR and MOA of barbiturates. (5M)
(b) Write the synthesis and uses of phenytoin and chlorpromazine hydrochloride. (5M)

### PART- C (7 x 5=35 Marks)

14 Explain the significance and determination methods of partition coefficient.

15 Write SAR of sympathomimetic agents.

16 Write synthesis of salbutamol and phenylephrine.

17 Write MOA of cholinesterase inhibitors.

18 Write the biosynthesis and catabolism of acetylcholine.

19 Classify adrenergic antagonists with examples.

20 Classify antipsychotics with examples.

21 Write synthesis and uses of halothane and ketamine hydrochloride.

22 Write structure and uses of following drugs

(A) aspirin (B) mefenamic acid (C) ibuprofen (D)acetaminophen (E) diclofenac.

Code. No: 6058/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV-Semester (PCI) (Suppl.) Examination, February 2020**

**Subject : Pharmacology-I**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** Answer all Questions from Part-A, any Two Questions from Part-B. and Any Seven Questions From Part-C.

**PART- A (10 x 2 = 20 Marks)**

1. What is biological half life. It's importance
2. Explain the concept of bioavailability.
3. What is dose response relationship? What are its advantages?
4. Write a note on therapeutic index.
5. Mention various therapeutic uses of β-adrenergic blockers.
6. Write the pharmacology of skeletal muscle relaxants.
7. Describe the stages of general anesthesia.
8. What is dry abuse give two example
9. Explain the role of serotonin in brain.
10. Mention the therapeutic uses and adverse reactions of tricyclic antidepressants.

**PART- B (2 × 10 = 20 Marks)**

11. Classify drugs used in Alzheimer's disease and explain the mechanism of action, adverse reactions and therapeutic uses of cerebroselectiveanticholineterases.
12. Explain the pharmacological actions and therapeutic uses of the following:
    a) Acetylcholinesterase inhibitors
    b) Adrenergic drugs
13. Define Epilepsy. Classify antiepileptic drugs. Write the mechanism of action, adverse effects and therapeutic uses of hydantoins.

**PART- C (7 × 5 = 35 Marks)**

14. Explain in detail about phase-I biotransformation of drugs with examples.
15. Discuss the factors modifying drug action.
16. Describe the pharmacokinetic drug interactions.
17. Explain the pharmacological actions of atropine.
18. Mention the mechanism of action and uses of local anesthetic agents.
19. Write the pharmacological actions and uses of benzodiazepines.
20. Explain the pharmacological actions of alcohol.
21. Describe the drug addiction and drug abuse.
22. Discuss the mechanism of action and uses of morphine.

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Code. No: 6057/PCI

# FACULTY OF PHARMACY

**B. Pharm IV-Semester (PCI) (Suppl.) Examination, January 2020**

**Subject : Physical Pharmaceutics-II**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** Answer all Questions from Part-A, any Two Questions from Part-B. and Any Seven Questions From Part-C.

## PART- A (10 x 2 = 20 Marks)

1 Differentiate lyophilic and lyophobic colloid
2 What is importance of Gold number in colloid.
3 What is sedimentation volume and degree of flocculation.
4 Write the factors influencing particle settling in suspension.
5 What is Ostwald ripening in suspensions.
6 What is multiple emulsion.
7 Write the importance of Heckle plots.
8 What is Newtonian flow and mention example.
9 Write the preventive measures for photolytic degradation.
10 What is half life & shelf life of drug.

## PART- B (2 x 10 = 20 Marks)

11 Write the principle and working of capillary, falling sphere and rotational viscometers.
12 Explain the derived properties of powders and approaches to determine flow properties of powders.
13 Explain the accelerated stability studies along with determination of expiry date.

## PART- C (7 x 5 = 35 Marks)

14 Describe kinetic and electrical properties of colloids?
15 Write the effect of electrolytes on lyophobic colloid.
16 Write the preparation methods for colloids.
17 Describe the stress and strain relationships in solid deformation.
18 Explain the theories of emulsification.
19 Describe interfacial properties of suspended particles.
20 Explain the procedure to determine the particle size by conductivity.
21 Explain the various approaches to determine particle number.
22 Write the preventive measures for chemical degradation of drug product.

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Code. No: 6055/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV-Semester (PCI) (Suppl.) Examination, January 2020**

**Subject : Pharmaceutical Organic Chemistry-III**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** Answer all Questions from Part-A, any Two Questions from Part-B. and Any Seven Questions From Part-C.

## PART- A (10 x 2 = 20 Marks)

1. Differentiate Enantiomers and Diastereomers.
2. Explain DL – systemof Nomenclature.
3. Draw the conformational isomers of ethane and cyclohexane.
4. Define and classify Heterocyclic compound.
5. Give reason for electrophilic substitution at $2^{nd}$ position in pyrrole
6. Explain the basicity of Pyridine
7. Draw the structures of Isoquinoline and Indole.
8. Give the structures of Pyrimidine and Azepine.
9. Give any two application of Sodium borohydride.
10. Give any two application of Lithium Aluminiumhydride.

## PART- B (2 × 10 = 20 Marks)

11. What are sequence rules and explain the RS system of nomenclature of Optical isomers.
12. Write the mechanism involved in Beckmann and Schmidt rearrangement
13. Write any two synthesis, reactions and medicinal uses of pyrazole and oxazole.

## PART- C (7 × 5 = 35 Marks)

14. Write a note on racemic modification
15. Write a note on asymmetric synthesis
16. Explain Stereoisomerism in biphenyl compounds and give the conditions for optical activity.
17. Give the significance of stereospecific and stereoselective reactions
18. Write any two synthesis, reactions and medicinal uses of pyrrole.
19. Write any two synthesis, reactions and medicinal uses of Imidazole
20. Write the mechanism involved in Oppenauer oxidation
21. Write the mechanism involved in Wolf-Kishner rearrangement.
22. Draw the structures of pyridine, quinolone, Acridine and indole. Write any two synthesis, reactions and medicinal uses of thiophene or thiazole.

Code. No: 6059/PCI

**FACULTY OF PHARMACY**

**B. Pharmacy IV-Semester (PCI) (Suppl.) Examination, January 2020**

**Subject : Pharmacognosy and Phytochemistry-I**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** Answer all Questions from Part-A, any Two Questions from Part-B. and Any Seven Questions From Part-C.

**PART- A (10 x 2 = 20 Marks)**

1. Define pharmacognosy, organized and unorganized crude drugs
2. What are tannins and write the identification test for tannins
3. What are ash values and write their importance
4. Write the chemical tests for acacia and agar
5. Write the biological source and uses of castor oil
6. What are flavonoids and give examples
7. Write the uses of urokinase and streptokinase
8. What are the various sources of drugs
9. What are natural allergens and give examples
10. Write the difference between fats and waxes

**PART- B (2 × 10 = 20 Marks)**

11. Define evaluation. Explain about microscopic evaluation
12. Give the list of various classification methods. Explain about the chemical and pharmacological classification methods with suitable examples
13. What are various types of cultures in plant tissue culture and write in brief about any two types of cultures

**PART- C (7 × 5 = 35 Marks)**

14. What is adulteration. Describe different types of adulteration in crude drugs with suitable examples
15. Explain the role of polyploidy and hybridization techniques in cultivation of medicinal Plants.16. What are proteolytic enzymes. Write the source, preparation and commercial utility of Papain.
17. Write the source and chemical tests for cotton and jute
18. What are plant hormones and write their applications
19. Define and classify alkaloids and write the identification tests for alkaloids
20. Write the source, chemical constituents and uses of Tragacanth and Wool fat
21. What are nutritional requirements in plant tissue culture
22. Write the importance and method of determination of moisture content.

Code. No: 13194/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV-Semester (PCI) (Main) Examination, August 2019**

**Subject : Pharmacognosy and Phytochemistry-I**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** Answer all Questions from Part-A, any Two Questions from Part-B. and Any Seven Questions From Part-C.

**PART- A (10 x 2 = 20 Marks)**

1. Define organized and unorganized crude drugs and give one example for each
2. What is organoleptic evaluation
3. Give the list of plant hormones and write any four applications of plant hormones
4. What is polyploidy and write its application in cultivation of medicinal plants
5. What are edible vaccines
6. Define alkaloids and write any two identification tests for alkaloids
7. Define and classify tannins
8. Write the source and test for purity of honey
9. Write the uses of gelatin
10. What are various proteolytic enzymes and write the uses of streptokinase.

**PART - B (2 × 10=20 Marks)**

11. Explain about physical evaluation of crude drugs
12. Write about factors influencing cultivation of medicinal plants
13. Write the biological source, preparation and commercial utility of any three proteolytic Enzymes.

**PART - C (7 × 5 = 35 Marks)**

14. Write the applications of plant tissue culture
15. Write in brief about morphological and chemical classification of crude drugs
16. What are lipids. Classify them and write about castor oil
17. Write the source, chemical nature and uses of cotton and jute
18. Write a brief note on novel medicinal agents from marine sources
19. Explain about nutritional requirements in plant tissue culture
20. Define and classify glycosides and write their properties
21. Write the biological source, chemical constituents and uses of agar and bees wax
22. Explain about lycopodium spore method.

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Code. No: 13193/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV-Semester (PCI) (Main) Examination, July / August 2019**

**Subject : Pharmacology-I**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** Answer all Questions from Part-A, any Two Questions from Part-B. and Any Seven Questions From Part-C.

## PART- A (10 x 2 = 20 Marks)

1. What is first pass metabolism. Give two examples.
2. Mention about enzyme inhibition.
3. What is vasomotor reversal of Dale?
4. Give the differences between local anesthetics and general anesthetics.
5. Define epilepsy and write the Structure of phenytoin
6. What is sedative and hypnotic Give examples
7. Enlist the drugs used in myasthenia gravis.
8. What is drug abuss. Give two examples.
9. Mention the clinical uses of naltrexone.
10. Name excitatory neurotransmitters present in CNS.

## PART-B (2 × 10 = 20 Marks)

11. a) Write the pharmacological actions of acetylcholine.
    b) Explain the various therapeutic uses and adverse reactions of β-adrenergic blockers.
12. Classify anti-epileptic agents and explain the mechanism of action and therapeutic uses of any two classes of drugs.
13. Define Parkinsonism. Classify anti-Parkinson's drugs with examples? Write the mechanism of action and therapeutic uses of MAO inhibitors.

## PART-C (7 × 5 = 35 Marks)

14. Compare the merits and demerits of oral and parenteral routes of administration.
15. Explain in detail about G-protein coupled receptors.
16. Discuss the phases of clinical trials.
17. Explain the pharmacological actions and therapeutic uses of acetylcholinesterase inhibitors.
18. Define myasthenia gravis. Enlist the drugs used in its treatment.
19. Write about the pre-anesthetics.
20. Write the mechanism of action and uses of disulfiram.
21. Explain the drug tolerance and dependence.
22. Write a short note on nootropics.

Code. No: 13192/PCI

# FACULTY OF PHARMACY

**B. Pharm IV-Semester (PCI) (Main) Examination, July / August 2019**

**Subject : Physical Pharmaceutics-II**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** Answer all Questions from Part-A, any Two Questions from Part-B. and Any Seven Questions From Part-C

## PART- A (10 x 2 = 20 Marks)

1. Classify colloids with examples.
2. What is HLB mention HLB Value ranges for any four surfactants
3. What is balk density? How it is useful in pharmacy
4. What is micro emulsion and mention its advantages.
5. What is angle of repose and mention its significance.
6. What is thixotropy. Explain with examples
7. Classify non-Newtonian systems with examples.
8. What is specific viscosity and mention its importance.
9. List the physical factors affecting degradation of drug product.
10. What are the equations for half-life and shelf life.

## PART - B (2 x 10 = 20 Marks)

11. Explain different optical properties of colloids with help of diagrams and equations.
12. Explain different methods to determine the surface area of pharmaceutical powders.
13. Describe the factors affecting stability of drug product.

## PART- C (7 x 5 = 35 Marks)

14. Write the effect of electrolytes on lyophilic colloid.
15. Write the formulation of flocculated and deflocculated suspensions.
16. Explain the formulation of emulsion by HLB method.
17. What is thixotropy explain with Rheograms.
18. Explain the plastic and elastic deformation of solids during compression
19. Explain the procedure to determine the particle size by microscopy.
20. What is porosity and mention the significance of Heckle plots.
21. Explain the factors improving the stability of emulsions.
22. Explain the methods to determine order of reactions.

Code No. 13191/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV Semester (PCI) Main Examination, July 2019**

**Subject: Medicinal Chemistry – I**

**Time: 3 Hours** **Max. Marks: 75**

**Note: Answer ALL questions from PART-A, any TWO questions from PART-Band any SEVEN questions from PART-C.**

## PART – A (10 x 2 = 20 Marks)

1. Define hydrogen bonding and its effect on biological activity of drugs.
2. Mention phase –II reactions?
3. Write any two applications of cholinesterase inhibitors with example of drugs .
4. Write the synthesis of propranolol.
5. Define adrenergic antagonists with examples.
6. Explain cholinergic blocking action with an example of drug.
7. Give the synthesis of phenytoin.
8. Define antipsychotics with examples.
9. Give the structures for fentanyl citrate and methadone hydrochloride.
10. Give the structures for aspirin and antipyrine.

## PART – B (2 x 10 = 20 Marks)

11. Define and give the significance of the following physicochemical parameters on biological activity (3+3+4)
    (a) Ionization (b) Chelation (c) Protein binding.

12. (a) Write in detail about MOA of Parasympathomimetics. (5)
    (b) Classify antiinflammatory agents with examples. (5)

13. (a) Write a note on SAR of benzodiazepines. (5)
    (b) Write the synthesis and uses of barbital and carbamazepine. (5)

## PART – C (7 x 5 = 35 Marks)

14. Explain the significance of bioisosterism in relation to biological activity with examples.
15. Write a note on biosynthesis and catabolism of Catecholamines.
16. Write in detail about SAR of beta blockers.
17. Classify sympathomimetics with examples.
18. Write the synthesis of dicyclomine hydrochloride and ipratropium bromide.
19. Write SAR of Parasympathomimetics.
20. Classify anticonvulsants with examples.
21. Give an account on general anesthetics.
22. Discuss in detail about SAR of morphine analogues.

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Code. No: 13190/PCI

# FACULTY OF PHARMACY

**B. Pharmacy IV-Semester (PCI) (Main) Examination, July / August 2019**

**Subject : Pharmaceutical Organic Chemistry-III**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** Answer all Questions from Part-A, any Two Questions from Part-B. and Any Seven Questions From Part-C.

## PART- A (10 x 2 = 20 Marks)

1. Write about any two elements of symmetry
2. Draw the conformational isomers of n-butane and cyclohexane.
3. Give conditions for optical activity.
4. Explain DL-system of Nomenclature.
5. Define and classify Heterocyclic compound.
6. Give reason for electrophilic substitution at 2nd position in pyrrole.
7. Draw the structures of Pyrazole and Imidazole.
8. Draw the structures of Pyrimidine and oxazole.
9. Give any two application of Sodium borohydride.
10. Give any two application of Lithium Aluminiumhydride.

## PART- B (2 × 10 = 20 Marks)

11. What are sequence rules and explain the RS system of nomenclature of Optical isomers.
12. Write the mechanism involved in Beckmann and Claisen-Schmidt rearrangement.
13. Write any two synthesis, reactions and medicinal uses of pyrazole and Imidazole.

## PART- C (7 × 5 = 35 Marks)

14. Write a note on resolution and reactions of chiral molecule.
15. Write a note on Geometrical isomerism and nomenclature of geometrical isomers.
16. Explain Stereoisomerism in biphenyl compounds and give the conditions for optical activity.
17. Give the significance of stereospecific and stereoselective reactions.
18. Write any two synthesis, reactions and medicinal uses of Furan.
19. Write any two synthesis, reactions and medicinal uses of thiophene.
20. Write the metal hydride reactions of sodium borohydride and lithium aluminium hydride.
21. Write the mechanism involved in Wolf-Kishner rearrangement.
22. Compare and contrast the acidity of pyrole and basicity of pyridine.